Photo: Jacek Maselko/ NOAA

Research Strategy (2012 - 2016)

The NOAA Marine Debris Program has developed a strategy[1] that will guide holistic, efficient, and impactful research projects through 2016. The knowledge we gain through these projects will focus prevention and reduction efforts on areas of greatest concern.

2012	2013	2014	2015	2016
Economics **Monitoring**	**Life cycle analysis** **Chemical impacts** **Plastic polymers** *Continuation of projects*	**Entanglement/ Trapping** **Ingestion** **Habitat degradation** *Continuation of projects*	**Microplastic assessment** *Continuation of projects*	**Completion and synthesis of projects**

Figure 1. Research into priority topic areas will be addressed throughout 2012-2016.

MARINE DEBRIS RESEARCH

Marine debris is a relatively new field of research, and there are many opportunities to advance understanding of how debris impacts the environment. Research topics include (1) development of methods and technology to assess abundance and behavior of marine debris, and (2) investigation of physical, chemical and societal impacts.

Marine Debris
[mə-rēn' də-brē'] *noun*

Any persistent solid material that is manufactured or processed and directly or indirectly, intentionally or unintentionally, disposed of or abandoned into the marine environment or Great Lakes.

www.MarineDebris.noaa.gov

PRIORITY TOPICS

Priority topic areas for 2012-16 include **marine debris monitoring, life cycle analysis, chemical impacts**, and **economic impacts.** The strategy focuses on those topics, but allows for exploration of other topic areas (Figure 1). Topics were evaluated based on feasibility, cost effectiveness, and importance to MDP mission.

In order to reach long-term goals, the MDP will initially complete important baseline studies that investigate the economic impacts of marine debris and the abundance and distribution of debris on shorelines.

The MDP will seek appropriate partnerships and conduct scoping exercises to plan for research on life cycle analysis (e.g., determining degradation rates of various debris items) and chemical impacts of plastic debris on the marine environment and organisms.

Images from left to right: (1) Shards of plastic collected from the ocean have weathered over time to become microplastics. (2) NOAA divers survey marine debris on the ocean floor. (3) Derelict and abandoned fishing gear (DFG) collected from the ocean. (4) A cluster of buoys found by a team of NOAA scientists along coastal the Gulf of Alaska while conducting marine debris monitoring and assessment surveys.

SECONDARY TOPICS

The MDP will initiate collaborative studies to address the biological and physical impacts of marine debris, namely entanglement and trapping, ingestion, and habitat degradation. These studies will provide a comprehensive impact assessment. An appraisal will determine whether additional monitoring and assessment of microplastic debris is warranted.

AREAS FOR INNOVATION AND FUTURE RESEARCH

Marine debris impacts coastal environments and economies across the country. In addition to prioritized research, the Program will continue to pursue opportunities that further marine debris research efforts by seeking new and productive partnerships to address the issue of marine debris around our nation's coasts.

Strategic planning and critical synthesis of the state of the science allow for efficient use and leveraging of resources. Partnerships with industry, academics, the non-governmental community, and other government partners are essential to solving the problems arising from marine debris.

[1]The research strategy discussed here is meant to guide NOAA Marine Debris Program efforts only, and is not intended to guide other organizations in their marine debris research endeavors.